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INTRODUCE NEW DETONATION DEVICE IN HUNGARIAN QUARRIES, COAL MINES

Jozsef Kota, president of the Mining Safety Research Institute and a Kossuth Prize winning mining engineer, has invented a new blasting method which has revolutionized mining technique in Hungary. His invention is based on the retarded detonation of explosive charges. The time interval between detonations can be measured in thousandths of a second only; hence, it is called the "millisecond" method.

The gist of the invention is that explosive charges, placed side by side in the explosion holes, are detonated not simultaneously but in succession at intervals of a minute. The explosions have a chain reaction, which causes strong vibrations in the stone or coal mass and increases the power of the blast.

Kota conducted his first experiment in a quarry at Felsogalla in August 1950. He constructed a simple timing mechanism, the operation of which can be learned in an hour. The experimental blast far exceeded all expectations. As a result of a single blast, 2,000 carloads of limestone were obtained in such small pieces that most of the stone could be loaded on mine trucks. Similar experiments were conducted at the Labatlan and Beremend quarries. Using 400 kilograms of explosive, Kota obtained 1,000 carloads of limestone in the Labatlan quarry in even smaller pieces than at Felsogalla.

After the initial success, Kota decided to experiment with underground blasting. Previously, the millisecond method was used infrequently underground and was never employed in coal mines. For his experiments in coal mining, Kota modified the timing mechanism used in quarries. Simplification was imperative, because the original mechanism required a maze of cables leading to the explosion holes and thereby obstructed the miners' work. The modified mechanism is easy to handle and is operated by a single plug. The Kota method has been used in several coal mines, including shaft No VIII of the Tatabanya mine, with excellent results for a number of months.

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The yield obtained by the Kota blasting method is 50 to 120 percent greater than by the old method. In addition, the new method permits more economical exploitation of the mine. While blasting by the previous method left heavy masses of coal or stone overhanging the mine floor, and required the use of pickaxes for many hours, Kota has greatly diminished this disadvantage, because the area blasted by his method can be controlled and formed according to plan.

Kota and his associates are now planning to introduce the new method in shafts where there is danger of mine damp. It is planned to introduce the method in all Hungarian mines by September 1951.

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